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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,776	03/14/2005	Ercan Ferit Gigi	NL 020859	1796

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EXAMINER

LENNOX, NATALIE

ART UNIT	PAPER NUMBER
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2626

MAIL DATE	DELIVERY MODE
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12/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/527,776

Applicant(s)

GIGI, ERCAN FERIT

Examiner

Natalie Lennox

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-10 is/are rejected.
- 7) ☐ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 04/03/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the unlabeled rectangular boxes shown in the drawings should be provided with descriptive text labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other

information submitted for consideration by the Office, and MPEP § 609.04(a) states; "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

3. The information disclosure statement filed January 12, 2006 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

4. Claims 4-7 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1, 8 and 9 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. As per claims 1, 8 and 9, the method, computer program product, and system claimed consist solely of mathematical operations without some practical application. If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.

7. Claim 8 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Regarding claim 8, applicant claims a "computer program product, in particular digital storage medium, comprising program means." Computer programs which impart functionality when employed as a computer component are categorized as functional descriptive material. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. More specifically, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional

interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.

8. Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Regarding claim 10, a synthesized speech signal is claimed. A claimed signal per se does not fall within any of the statutory categories because it is clearly not a process, machine, manufacture, or composition of matter, it has no physical structure, and does not itself perform any useful, concrete or tangible result.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1 and 8 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Claims 1 and 8 lack specifying where a "determination of a required pitch bell location" is taking place, which is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). As per

claims 1 and 8, applicant claims "determining of a required pitch bell location" and further "mapping of the required pitch bell location onto an original signal to provide a first pitch bell location." As claimed, the determination step (a)) does not specify where the determination is taking place, and further the mapping step (b)) presents the need of an additional element to perform the mapping step with. As demonstrated in Figure 2, there exists a time axis 200 in the domain of the signal to be synthesized which is the signal used to perform the determination step (a)) as presented in Figure 2 and as described in the disclosure of the invention. Therefore, it is concluded that this essential and critical element is missing from the claims. For purposes of examination, examiner interprets the determining step (a)) from Figs. 1 and 8 as being performed on the time axis 200 of the signal to be synthesized.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 3, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal (US Patent 6,963,833) in view of Koezuka (US Patent 6,801,898).

As per claims 9, 1, and 8, Singhal teaches a computer system, a method, and a computer program product, respectively, of synthesizing a signal comprising the steps of:

a) determining of a required pitch bell location (1th harmonic region or spectral amplitude (Samp) from Col. 14, lines 47-56 of the current speech sample from Col. 14, lines 8-13),

c) randomly shifting the first pitch bell location to provide a second pitch bell location (Col. 14, lines 25-33),

d) windowing of the original signal on the second pitch bell location to provide a pitch bell (Col. 14, lines 25-37, more specifically lines 31-37),

e) repeating of the steps a) to d) for all required pitch bell locations and performing an overlap and add operation with respect to the pitch bells in order to synthesize the signal (Col. 14, lines 25-37, more specifically lines 36-37).

However, Singhal does not specifically mention

b) mapping of the required pitch bell location onto an original signal to provide a first pitch bell location.

Conversely, Koezuka teaches

b) mapping of the required pitch bell location onto an original signal to provide a first pitch bell location (Col. 4, lines 47-53).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of mapping of the required pitch bell location onto an original signal to provide a first pitch bell location as taught by Koezuka for Singhal's system, method, and computer program product, because original digital signals are compressed or expanded in time scale to match with a recording time of the output digital signals (Koezuka's Col. 4, lines 47- 49).

As per claim 3, Singhal, as modified by Koezuka, teaches the method of claims 1 or 2, whereby the step of randomizing of the first pitch bell location is performed by randomly shifting the first pitch bell location within an interval of +/- the pitch (Col. 14, lines 47-50).

As per claim 10, Singhal, as modified by Koezuka, teach a synthesized signal comprising a number of pitch bells which are overlapped and added, each of the pitch bells resulting from windowing of an original signal on a second pitch bell location (i'), the second pitch bell location having been obtained by randomizing of a first pitch bell location (i), which is obtained by mapping of a required pitch bell location onto an original signal (see rejection for claim 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of mapping of the required pitch bell location onto an original signal to provide a first pitch bell location as taught by Koezuka for Singhal's system, method, and computer program product, because original digital signals are compressed or expanded in time scale to match with a recording time of the output digital signals (Koezuka's Col. 4, lines 47- 49).

12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Singhal (US Patent 6,963,833) in view of Koezuka (US Patent 6,801,898) as applied to claim 1 above, and further in view of Kagoshima et al. (US Patent 5,890,118).

As per claim 2, Singhal, as modified by Koezuka, teaches the method of claim 1 but they do not specifically mention the determination of required pitch bell locations being performed by dividing the required length of the signal to be synthesized into time intervals, each of the time intervals having the length of a pitch.

However, Kagoshima et al. teach the determination of required pitch bell locations being performed by dividing the required length of the signal to be synthesized into time intervals, each of the time intervals having the length of a pitch (Col. 4, lines 35-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of the determination of required pitch bell locations being performed by dividing the required length of the signal to be synthesized into time intervals, each of the time intervals having the length of a pitch as taught by Kagoshima et al. for Singhal's method, as modified by Koezuka, because Kagoshima obtains pitch period information from a speech signal to be synthesized for determining an interpolation position so that the distance between waveform interpolation positions may be equal to the pitch period specified (Col. 4, lines 38-43).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie Lennox whose telephone number is (571) 270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NL

12/18/2007


RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER